

SCIENCE

A WEEKLY JOURNAL

DEVOTED TO THE ADVANCEMENT OF SCIENCE.

EDITORIAL COMMITTEE : S. NEWCOMB, Mathematics ; R. S. WOODWARD, Mechanics ; E. C. PICKERING, Astronomy ; T. C. MENDENHALL, Physics ; R. H. THURSTON, Engineering ; IRA REMSEN, Chemistry ; J. LE CONTE, Geology ; W. M. DAVIS, Physiography ; O. C. MARSH, Paleontology ; W. K. BROOKS, C. HAET MERRIAM, Zoology ; S. H. SCUDDER, Entomology ; C. E. BESSEY, N. L. BRITTON, Botany ; HENRY F. OSBORN, General Biology ; C. S. MINOT, Embryology, Histology ; H. P. BOWDITCH, Physiology ; J. S. BILLINGS, Hygiene ; J. McKEEN CATTELL, Psychology ; DANIEL G. BRINTON, J. W. POWELL, Anthropology.

NEW SERIES. VOLUME VII.

JANUARY-JUNE, 1898.

NEW YORK
THE MACMILLAN COMPANY
1898

THE NEW ERA PRINTING COMPANY,
41 NORTH QUEEN STREET,
LANCASTER, PA.

CONTENTS AND INDEX.

N. S. VOL. VII—JANUARY TO JUNE, 1898.

The Names of Contributors are Printed in Small Capitals.

ABBE, CLEVELAND, John A. Gano, 123
Academy of Sciences, Washington, 58, 253, 595
Aeronautical Conference, A. LAWRENCE ROTCH, 846
Agricultural Chemistry, H. W. WILEY, 16, 44
Alabama Industrial and Scientific Society, E. A. SMITH, 70, 504; Geological and Biological Surveys, E. A. SMITH, 678
Alchemy, The Revival of, S. H. EMMENS, 386
Allen, Harrison, BURT G. WILDER, 262
ALLEN, J. A., A Precise Criterion of Species, 801
ALLIN, A., Extra-organic Evolution, 267
American Assoc. for the Advancement of Science, 487
Anesthesia, Electrical, E. W. SCRIPTURE, 776
Analytical Work, The Dignity of, C. B. DUDLEY, 185
Anatomists, Assoc. of American, D. S. LAMB, 311
Anatomy, The Biological Problems of To-day, BURT G. WILDEE, 150
ANDREWS, G. F., A Necessary Correction, 802
Antarctic Exploration, H. C. BUMFUS and A. HEILPRIN, 121; Conference, The Royal Society's, 339
Anthropological Society of Washington, J. H. MCCORMICK, 71, 428, 646
Anthropology, Section of, at Ithaca, W J MCGEE, 53; Notes on, D. G. BRINTON, 57, 88, 125, 165, 204, 236, 274, 312, 347, 390, 416, 456, 491, 525, 593, 629, 668, 706, 742, 767, 795, 826, 851
Applied Chemistry, Third International Congress of, 64, 769; H. W. WILEY, 280
Arches, Causes of Natural, F. S. DELLENBAUGH, 714; Natural, of Kentucky, A. M. MILLER, 845
Arnold, C., Chemie, E. RENOUF, 467
Arthur, J. C., and D. T. MacDougal, Living Plants and their Properties, C. E. BESSEY, 496
Astronomical Research and Teaching, G. E. HALE, 532
Astrophysical Notes, E. B. F., 417, 795
ATKINSON, GEO. F., Experiments with the Röntgen Rays on Plants, 7; Laboulbeniaceae, R. Thaxter, 752
Audubon and his Journals, C. HART MERRIAM, 289
Australasian Assoc. for Advancement of Science, 452

B., C. F., Natural History of the U. S., R. W. Shufeldt, 357
B., H. C., Penikese, 608
Bailey, E. H. S., Qualitative Analysis, J. E. G., 466
BAILEY, VERNON, Wild Neighbors, 173
BAKER, FRANK, Wilder's System der Nomenclatur, T. Dwight, 715
BAKER, MARCUS, A Century of Geography in the United States, 541
BALDWIN, J. MARK, Isolation and Selection, 638
BANCROFT, W. D., Traité élémentaire de mécanique chimique, P. Duhem, 214
Bancroft, W. D., Phase Rule, R. B. WARDER, 138

BANGS, OUTRAM, New Name for Nova Scotia Fox, 271
BARROWS, F. W., New York State Science Teachers' Association, 589
BARUS, C., Mathematical Theory of Top, F. Klein, 469
BAYLEY, W. S., Description of Minerals of Commercial Value, D. M. Barringer, 716
Bayley, W. S., C. R. Van Hise, H. L. Smith, U. S. Geol. Survey Monograph XVIII, J. F. KEMP, 137
Beman, W. W., and D. E. Smith, Famous Problems of Elementary Geometry, F. N. COLE, 102
BESSEY, CHARLES E., Some Considerations upon the Functions of Stomata, 13; A Text-Book of General Lichenology, A. Schneider, 68; Correction, 136; Current Notes on Botany, 235, 560, 669, 842; High School Botany, 266; Ellis's North American Fungi, 346; A Laboratory Manual in Practical Botany, C. H. Clark, 465; Living Plants and their Properties, J. C. Arthur and D. T. MacDougal, 496; Text-Book of Botany, E. Strasburger, F. Noll, H. Schenck and A. F. Schimper, 680
BIGELOW, W. D., Pure Food Legislation, 505
Binet, A., L'Année psychologique, E. B. DELABARRE, 248
Biological Station, Functions and Features of, C. O. WHITMAN, 37; at Woods Hole, 90; Society of Washington, F. A. LUCAS, 108, 180, 287, 357, 395, 468, 501, 646; Problems of To-day, H. F. OSBORN, W. TRELEASE, BURT G. WILDEE, J. McKEEN CATTELL, J. LOEB, T. H. MORGAN, CHAS. B. DAVENPORT, 145; Laboratory of the Brooklyn Institute, 383
Biology, N. Y. Academy of Sciences, GARY N. CALKINS, 105, 176, 431, 540, H. E. CRAMPTON, 647
Björling, P. R., Whittaker's Mechanical Engineer's Pocket-book, R. H. T., 427
Blanchard, R., Traité de zoologie, W. H. DALL, 537
BLANKINSHIP, J. W., Precise Criterion of Species, 690
BLISS, C. B., N. Y. Acad. of Sci., Anthropology and Psychology, 179
BOAS, FRANZ, A Precise Criterion of Species, 860
BOLTON, H. CARRINGTON, The Smithsonian Institution, 181; The Metals of the Platinum Group, J. L. Howe, 282; Iatro-chemistry in 1897, 397; Alchemy and Pharmacy, C. J. S. Thompson, 499
Bolyai, J., Scientia Spatii Absolute Vera, GEORGE BRUCE HALSTED, 861
Boston Society of Natural History, SAMUEL HENSHAW, 180, 251, 575, 682
Botanical Notes, CHARLES E. BESSEY, 235, 560, 669, 842; Seminar of the University of Nebraska, 812
Botany, High School, C. E. BESSEY, 266
Breeding of Animals at Woods Hole, March, 1898, H. C. BUMFUS, 485; April, 1898, A. D. MEAD, 702
Bridge in Utah, A Natural, A. WINSLOW, 557

BRINTON, D. G., Current Notes on Anthropology, 57, 88, 125, 165, 204, 236, 274, 312, 347, 380, 416, 456, 491, 525, 593, 629, 668, 706, 742, 767, 795, 826, 851; Northwest Central Queensland Aborigines, W. E. Roth, 498; The Antiquities of Tennessee, Y. P. Thruston, 539; Völkerkunde der deutschen Schutzgebiete, F. von Luschan, 539

British Association in Bristol, Coming Meeting of, 744

Bronchial System of the Mammalia, Eparterial, G. S. HUNTINGTON, 520

BRUSH, C. F., The Transmission of Radiant Heat by Gases at Varying Pressures, 474; The Measurement of Small Gaseous Pressures, 730

BUMFORD, H. C., The American Society of Naturalists, 21; Antarctic Exploration, 121; Breeding of Animals at Woods-Hole in March, 1898, 485

BURGESS, E. S., Torrey Botanical Club, 107, 252, 322, 359, 395, 430, 811, 867

Butler, Nicholas Murray, The Meaning of Education, FRANK McMURRY, 866

CALKINS, GARY N., Biology, New York Academy of Sciences, 105, 176, 431, 540; La cellule et les protozoaires, Delage et Herouard, 174

CAMPBELL, M. R., Earthquake shocks, 233

CATTELL, J. McKEEN, Psychology, The Biological Problems of to-day, 152; The Longevity of Scientific men, 386; Mrs. Piper, the Medium, 534, 641; The Definition of Species, 751

Character Regularly Acquired but never Inherited, F. H. HERRICK, 280

Chemical, American, Society, N. Y., D. WOODMAN, 108, 285, 503, 719, 867; J. L. H., 272; Washington, W. H. KRUG, 468, 683, 782; V. K. CHESNUT, 180; Journal, J. E. GILPIN, 144, 323, 396, 611, 681, 809

Chemistry, Third International Congress of Applied, 64, 769; H. W. WILEY, 280; Inorganic, Notes on, J. L. H., 89, 126, 166, 237, 275, 347, 380, 418, 456, 491, 563, 594, 630, 707, 743, 796, 827, 852; Teaching of, W. P. MASON, 734

CHESNUT, V. K., Chemical Society of Washington, 180

Christ, H., Die Farnkräuter der Erde, L. M. UNDERWOOD, 572

'Christian Science,' 565

Citations, Brevity in, H. B. WARD, 317

Clark, C. H., Practical Botany, C. E. BESSEY, 465

CLAYTON H. H., Weather Harmonics, 243

Clayton, H. H., Exploration of the Air by Means of Kites, R. DEC. WARD, 609

CLEMENTS, F. E., Kern und Zelltheilung bei den Sphaerilariceen, W. T. Swingle, 391; Das kleine botanische Practicum, E. Strasburger, 392

Clerke, A. M., A. Fowler, and J. E. Gore, Astronomy, M. B. SNYDER, 778

Climatic Contrasts along the Oroya Railway, R. DEC. WARD, 133

Climatology, as distinguished from Meteorology, M. WHITNEY, 113

Coastal Cloud, South American, R. DEC. WARD, 211

COCKERELL, T. D. A., Botanical Observations on the Azores, W. Trelease, 538; Isolation and Physiological Selection, G. J. Romanes, 606; The Diverse Floras of the Rocky Mountain Region, 625; Agricultural Experiment Stations, A. C. True, 753; Land Shells of America, H. A. Pilsbry, 806

COLE, F. N., Famous Problems of Elementary Geometry, W. W. Beman and D. E. Smith, 102; Calculus for Engineers, J. Perry, 103.

Color, Blindness, OGDEN N. ROOD, 785; Vision, W. LE CONTE STEVENS, 513, 677; E. B. TITCHENER, 603, 832; C. LADD FRANKLIN, 773

Correction, CHARLES E. BESSEY, 136; G. F. ANDREWS, 802

Coryphodon Radians, H. F. OSBORN, 585

CRAMPTON, H. E., N. Y. Acad. of Sci., Biology, 647

Crustacean Genus Scyllarides, THEO. GILL, 98

D. JR., J., Birds of Village and Field, F. A. Merriman, 643

DALL, W. H., Recent Progress in Malacology, 334; Traité de zoologie, Raphaël Blanchard, 537

DAVENPORT, C. B., Morphogenesis, The Biological Problems of To-day, 158; Precise Criterion of Species, 685, 776

DAVIS, W. M., Current Notes on Physiography, 56, 124, 203, 273, 414, 489, 561, 627, 704, 765, 850; A View of the Ohio Valley in, 1755, 640

DELABARRE, E. B., L'Année psychologique, A. Binet, 248

Delage et Herouard, Traité de zoologie concrete: La cellule et les protozoaires, GARY N. CALKINS, 174

DELENNAUGH, F. S., Causes of Natural Arches, 714

Destruction of the United States Battleship Maine, R. H. THURSTON, 642

DEXTER, E. G., An Interesting Monstrosity, 136

Discussion and Correspondence, 28, 64, 94, 133, 172, 211, 243, 279, 317, 353, 386, 424, 462, 532, 570, 603, 637, 677, 713, 749, 773, 801, 832, 860

DODGE, R. E., New York Academy of Sciences, Geology, 36, 178, 503; Reception and Exhibition, 558

DUDLEY, C. B., Dignity of Analytical Work, 185

Duhem, P., Traité élémentaire de mécanique chimique, W. D. BANCROFT, 214

Durchmusterung, The Northern, E. C. PICKERING, J. H. HAGEN, M. B. SNYDER, 354

DWIGHT, THOMAS, Traité des variations du système musculaire de l'homme, A. F. LeDouble, 212

Dwight, Thomas, Wilder's System der Nomenclatur, FRANK BAKER, 715

Earthquake Shocks, M. R. CAMPBELL, 233

Ecker, A., and R. Wiedersheim, Anatomie des Frosches, J. S. KINGSLY, 463

Eclipse, Total, E. W. MAUNDER, 327; 631, 670

Electrical Science, THOMAS GRAY, 361, 402

Elizabeth Thompson Science Fund, CHARLES SEDGWICK MINOT, 122, 281

Ellis's North American Fungi, C. E. BESSEY, 346

EMMENS, S. H., The Revival of Alchemy, 386

EMMONS, S. F., A Century of Geography in U. S., 677

Energy of Organisms, Genetic, S. H. WILLIAMS, 721

Engineering Notes, R. H. THURSTON, 764

Engelmann Botanical Club, H. VON SCHRENK, 216, 359, 502

Entomological Society of Washington, L. O. HOWARD, 392

Evans, P. N., Chemical Analysis, J. E. G., 466

Evolution, Extra-organic, A. ALLIN, 267

F., E. B., Astrophysical Notes, 417, 795

FARRAND, LIVINGSTON, Amer. Psychol. Assoc., 450

FARRINGTON, O. C., The Debt of the World to Pure Science, 605

FAWCETT, CECILY D., and KARL PEARSON, Inheritance of the Cephalic Index, 551

Fergusson, S. P., Exploration of the Air by Means of Kites, R. DE C. WARD, 609.

Field Columbian Museum, The, 848
 Fish Commission, The U. S., 58 ; J. W. POWELL, 279
 FLETCHER, ALICE C., The Import of the Totem, 296
 FLINT, A. S., Wisconsin Academy of Science, Arts
 and Letters, 142
 Floras of the Rocky Mountain Region, Diverse, T. D.
 A. COCKERELL, 625
 Fonvielle, W. de, Les Ballons-sondes de MM. Her-
 mite et Besançon, A. L. ROTCH, 33
 Food Legislation, W. D. BIGELOW, 505
 Forest Reserves, Surveys of, W. F. M., 128
 Fox, a New Name for the Nova Scotia, O. BANGS, 271
 Frankland, P., Pasteur, EDWIN O. JORDAN, 836
 FRANKLIN, C. L., Color Vision, 773
 Frost, E. B., The Sun's Place in Nature, N. Lockyer,
 777
 Fulgar perversum at Avalon, N. J., Fossil, L. WOOL-
 MAN, 751

G., J. E., Quantitative Chemical Analysis, P. N.
 Evans, 466 ; E. H. S. Bailey, 466
 Gano, John A., CLEVELAND ABBE, 123
 GANONG, W. F., Society for Plant Morphology and
 Physiology, 117
 Geography in the United States, A Century of, MAR-
 CUS BAKER, 541 ; S. F. EMMONS, 677
 Geologic Atlas of the United States, Folio 36, 286
 Geological Society of America, Montreal Meeting, J.
 F. KEMP, 48, 79 ; Society of Washington, W. F.
 MORSELL, 71, 143, 216, 358, 429, 502, 612, 810 ;
 Survey, W. S., Monograph XVIII., J. F. KEMP, 137
 Geology, N. Y. Academy of Sciences, R. E. DODGE, 36,
 178, 503 ; H. RIES, 683, 812 ; Journal of, 323, 771
 GILBERT, G. K., Physiographic Nomenclature, 94
 Gill, A. H., Oil Analysis, S. F. PECKHAM, 391
 Gill, THEO., Crustacean Genus Scyllarides, 98
 Gilpin, J. E., American Chemical Journal, 144, 323,
 396, 611, 681, 809
 GOEBEL, K., Julius Sachs, 662, 695
 GRAY, THOMAS, Electrical Science, 361, 402
 Griffin, Bradley Beverley, E. B. W., 523
 Grinnell, G. B., and T. Roosevelt, Trail and Camp
 Fire, C. H. M., 320
 Groom, P., Botany, CONWAY MACMILLAN, 466

H., G. B., Thomas Jeffery Parker, 376
 H., J. L., Notes on Inorganic Chemistry, 89, 126, 166,
 237, 275, 347, 380, 418, 456, 491, 563, 594, 630,
 707, 743, 796, 827, 852 ; The American Chemical
 Society, 272
 HALE, G. E., Astronomical Research and Teaching,
 532 ; The Function of Large Telescopes, 605
 HALLOCK, W., Artesian Wells of Ia., W. H. Norton, 499
 HALSTED, GEORGE BRUCE, Newcomb's Philosophy
 of Hyper-space, 212 ; The Lobachevski Prize, 231 ;
 Theoretical and Practical Graphics, F. N. Will-
 son, 355 ; Scientia Spatii Absolute Vera, J.
 Bolyai, 861
 Heat Transmission by Gases, C. F. BRUSH, 474
 HEILPRIN, ANGELO, Antarctic Exploration, 121
 Helm, G., Mathematical Chemistry, the Energetics of
 Chemical Phenomena, R. B. WARDER, 139
 HENSHAW, S., Boston Society of Natural History
 180, 251, 575, 682 ; Revision of the Orthopteran
 Group Melanoplus (Acrididae), S. H. Scudder, 497
 Heredity, Ancestral, KARL PEARSON, 337
 HERRICK, C. L., The Vital Equilibrium and the Ner-
 vous System, 813

HERRICK, F. H., A Character, regularly Acquired
 but never Inherited, 280
 HOLDEN, E. S., The Longevity of Scientific Men, 462
 Horn, George H., JOHN B. SMITH, 73
 HOWARD, L. O., Les Cicadomyies, P. Marchal, 246 ;
 Entomological Society of Washington, 392
 HOWE, J. L., A. Joly, 230
 Howe, J. L., Bibliography of the Metals of the Platini-
 num Group, H. CARRINGTON BOLTON, 282
 HUNTINGTON, G. S., Eparterial Bronchial System of
 the Mammalia, 520
 HUTTON, F. W., Isolation and Selection, 570
 Hydrogen, Liquid, 745, 855
 Hyper-space, Philosophy of, SIMON NEWCOMB, 1 ;
 GEORGE BRUCE HALSTED, 212

Iatro-Chemistry, H. CARRINGTON BOLTON, 397
 Igneous Rocks, Classification of, H. W. TURNER, 622
 INGERSOLL, ERNEST, Wild Neighbors, 172
 Inheritance of the Cephalic Index, C. D. FAWCETT
 and KARL PEARSON, 551
 Intelligence, Animal, EDWARD THORNDIKE, 818
 Iowa Academy of Sciences, HERBERT OSBORN, 85
 Isolation and Selection, F. W. HUTTON, 570 ; H. S.
 WILLIAMS, 637 ; J. MARK BALDWIN, 638

JAMES, W., Mrs. Piper, The Medium, 640
 JASTROW, JOSEPH, The Longevity of Scientific Men,
 463 ; Stereoscopic Vision, 615
 JENNINGS, H. S., The Development of the Frog's
 Egg, T. H. Morgan, 283
 Joly, A., J. L. HOWE, 230
 JONES, H. C., Physical Chemistry in Leipzig, 786
 JORDAN, EDWIN O., Pasteur, P. Frankland, 836
 Journals, Scientific, 144, 323, 360, 395, 432, 500, 574,
 611, 644, 680, 717, 782, 809, 839
 JUDD, C. H., Binocular Factors in Monocular Vision,
 269 ; Retinal Images and Binocular Vision, 425

KEMP, J. F., Geological Society of America, 48, 79 ;
 U. S. Geological Survey, Monograph xviii., C.
 R. Van Hise, W. S. Bayley and H. L. Smith, 137
 KENYON, F. C., Terminology of the Neurocyte, 424
 KEYES, C. R., Modern Stratigraphical Nomenclature,
 571 ; The Myth of the Ozark Isle, 588
 Kimball, Alonzo S., T. C. M., 54
 KINGSLEY, J. S., Anatomie des Frosches, A. Ecker
 and R. Wiedersheim, 463
 Klein, F., Mathematical Theory of the Top, C. BARUS,
 469
 KNIGHT, W. C., Prehistoric Quartzite Quarries in
 Central Eastern Wyoming, 308
 KOLLMANN, J., Lehrbuch der Entwicklungsgeschichte
 des Menschen, A. SCHAPER, 779
 KRUG, W. H., Chemical Society of Washington, 468,
 683, 782
 KÜMMEL, H. B., Age of the Artifact-bearing Sand at
 Trenton, 115

L., F. A., Zoological Notes, 413
 Ladd, G. T., Outlines of Descriptive Psychology, H.
 C. WARREN, 610
 Lamarck and a 'Perfecting Tendency,' C. O. WHIT-
 MAN, 99
 LAMB, D. S., Assoc. of American Anatomists, 311
 Lamb, H., Infinitesimal Calculus, W. F. OSGOOD, 678
 Lanciani, R., Ancient Rome, J. R. WHEELER, 244
 Le Double, A. F., Traité des variations du système
 musculaire de l'homme, THOMAS DWIGHT, 212

LEE, F. S., American Physiological Society, 217
 Lobachévski Prize, First Award of, GEORGE BRUCE HALSTED, 231
 Lockyer, Norman, Eclipses, H. W. WRIGHT, 99 ; The Sun's Place in Nature, E. B. FROST, 777
 LOEB, J., Physiology, The Biological Problems of To-day, 154
 Longevity of Scientific Men, J. McKEEN CATTELL, 386 ; E. S. HOLDEN, 462 ; JOSEPH JASTROW, 463
 LUCAS, F. A., Information desired, 68 ; Biological Society of Washington, 108, 180, 287, 357, 395, 468, 501, 646
 Luschan, F. von, Beiträge zur Völkerkunde der deutschen Schutzgebiete, D. G. BRINTON, 539

M., T. C., Alonzo S. Kimball, 54
 M., W. F., Survey of Forest Reserves, 128
 McCORMICK, J. H., The Anthropological Society of Washington, 71, 428, 646
 MACDOUGAL, D. T., Pflanzenphysiologie, W. Pfeffer, 318 ; Plant Physiology, 369
 McGEE, W. J., Anthropology at Ithaca, 53
 MACMILLAN CONWAY, Pteridophytes and Gymnosperms, 161 ; Elementary Botany, P. Groom, 466
 McMURRAY, FRANK, The Meaning of Education, Nicholas Murray Butler, 866
 Malacology, Recent Progress in, W. H. DALL, 334
 MALL, F. P., Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbeltiere, A. Oppel, 426
 Manacéine, M. de, Sleep, G. T. W. PATRICK, 175
 Marchal, P., Les Cécidomyies, L. O. HOWARD, 246
 Marsh's Collections, Presentation of, to Yale University, 77
 Marsupial, A Placental, H. F. O., 454
 MASON, OTIS T., Travel and Transportation, 66
 MASON, W. P., The Teaching of Chemistry, 734
 Mathematical Society, American, 238, 564, 718
 MAUNDER, E. W., Total Eclipse of the Sun, 237
 MEAD, A. D., The Breeding of Animals at Woods Hole during the Month of April, 1898, 702
 Mechanical Engineers, The American Society of, R. H. THURSTON, 824
 MELDOLA, R., Proposed Sylvester Memorial, 65
 MERRIAM C. HART, Mammalium tam Viventium quam Fossilium, E. L. Trouessart, 30 ; Audubon and his Journals, 289 ; Trail and Camp Fire, G. B. Grinnell and T. Roosevelt, 320
 Merriam, F. A., Birds, J. D., JR., 643
 Merrill, G. P., Stones for Building and Decoration, R. H. T., 392
 Meteorological Work, Harvard's, on the West Coast of South America, R. DEC. WARD, 95
 Meteorology, Notes on, R. DEC. WARD, 415, 524, 628, 766, 793 ; and Terrestrial Magnetism, Reprints of Rare Works on, 527
 Michigan, Natural History Survey, V. M. SPALDING, 577
 MILLER, A. M., Natural Arches of Kentucky 845
 Mimicry in Insects, ROLAND TRIMEN, 433
 MINOT, CHARLES SEDGWICK, Elizabeth Thompson Science Fund, 122, 281
 Miron, F., Les huiles minérales, S. F. PECKHAM, 389
 Models of Extinct Vertebrates, H. F. OSBURN, 841
 Monstrosity, An Interesting, E. G. DEXTER, 136
 MORGAN, T. H., Developmental Mechanics, The Biological Problems of To-day, 156
 Morgan, T. H., The Development of the Frog's Egg, H. S. JENNINGS, 283

Morphological Society, The American, G. H. PARKER, 194, 220
 MORSE, E. S., Spiritualism as a Survival, 749
 MORSELL, W. F., Geological Society of Washington, 71, 143, 216, 358, 429, 502, 612, 810
 Mourlon, M., et G. Simoens, Bibliographia geologica F. B. WEEKS, 808

Naples, 'University Table' at Biological Laboratory, 91
 National Academy of Sciences, 613
 Naturalists, American Society of, H. C. BUMPUS, 21
 NEWBOLD, WM. ROMAINE, The Psychology of Suggestion, Boris Sidis, 863
 New Books, 72, 144, 180, 216, 288, 324, 432, 468, 540, 576, 648, 720, 812, 840, 868
 NEWCOMBE, SIMON, Philosophy of Hyper-space, 1
 New York, Academy of Sciences, Geology, R. E. Dodge, 36, 178, 503 ; H. RIES, 683, 812 ; Biology, G. N. CALKINS, 105, 176, 431, 540 ; H. E. CRAMPTON, 647 ; Psychology and Anthropology, C. B. BLISS, 179 ; Reception and Exhibition, R. E. DODGE, 558 ; Address of the President, H. F. OSBORN, 649 ; State Science Teachers' Association, F. W. BARROWS, 589 ; Zoological Park, H. F. OSBORN, 759

NOLAN, E. J., Academy of Natural Sciences of Philadelphia, 681, 720, 784, 840
 Nomenclature, Physiographic, G. K. GILBERT, 94
 NORRIS, J. F., Organic Chemistry W. A. NOYES, 69
 Norton, W. H., Artesian Wells of Ia., W. HALLOCK, 499
 Noyes, W. A., Organic Chemistry, J. F. NORRIS, 69

O., H. F., Paleontological Notes, 164 ; A Placental Marsupial, 454
 Observations on the Azores, 709
 Observatory, U. S. Naval, 111 ; The Allegheny, 382, 418
 Ohio, State Academy of Sciences, R. OSBURN, 141 ; Valley in 1755, W. M. DAVIS, 640
 Oppel, A. Anatomie der Wirbeltiere, F. P. MALL, 427
 OSBORN, H., Iowa Academy of Sciences, 85
 OSBORN, HENRY F., Paleontology, The Biological Problems of To-day, 145 ; A Complete Skeleton of Teleoceres, 554 ; Coryphodon Radians, 585 ; Address of the President, N. Y. Academy of Sciences, 649 ; N. Y. Zoological Park, 759 ; Models of Extinct Vertebrates, 841
 OSBURN, R., Ohio State Academy of Sciences, 141
 OSGOOD, W. F., Infinitesimal Calculus, H. Lamb, 678

PACKARD, A. S., North American Orthoptera, S. H. Scudder, 33
 Packard A. S., Entomology, W. M. WHEELER, 834
 Paleontological Notes, H. F. O., 164
 Paleontology, Presentation of Professor Marsh's Collection to Yale University, 77.
 PARKER, G. H., American Morphological Society, 194, 220
 Parker, Thomas Jeffery, G. B. H., 376, and W. A. Haswell, A Text-Book of Zoology, E. B. W., 535
 PATRICK, G. T. W., Sleep, M. de Manacéine, 175
 PEARSON, KARL, On the Law of Ancestral Heredity, 337 ; and C. D. FAWCETT, The Cephalio Index, 551
 PECKHAM, S., Les huiles minérales, F. Miron, 389 ; Oil Analysis, A. H. Gill, 391
 Penikese, H. C. B., 608
 Perry, J., Calculus for Engineers, F. N. COLE, 103

Pfeffer, W., Pflanzenphysiologie, D. T. MACDOUGAL, 318
 Philadelphia, Academy of Natural Sciences, E. J. NOLAN, 681, 720, 784, 840
 Philosophical Society of Washington, E. D. PRESTON, 142, 215, 251, 321, 394, 502, 647, 719, 839
 Physical Chemistry in Leipzig, Opening of the New Laboratory for, H. C. JONES, 766
 Physiographic Nomenclature, G. K. GILBERT, 94
 Physiography, Notes on, W. M. DAVIS, 56, 124, 203, 273, 414, 489, 561, 627, 704, 785, 850
 Physiological Society, The American, F. S. LEE, 217
 Photometer, Flicker, OGDEN N. ROOD, 757
 PICKERING, E. C., J. H. HAGEN, M. B. SNYDER, The Northern Durchmusterung, 354
 Pictet, Raoul, Étude critique du matérialisme et du spiritualisme, E. A. STRONG, 864
 Pillsbury, H. A., Land Shells of America, T. D. A. COCKERELL, 806
 Piper, Mrs. the Medium, J. McKEEN CATTELL, 534, 641; W. JAMES, 640
 Plant, Morphology and Physiology, Society for, W. F. GANONG, 117; Physiology, The Province and Problems of, D. T. MACDOUGAL, 369
 Poole, H., The Calorific Power of Fuels, R. H. THURSTON, 574
 POWELL, J. W., President McKinley's Appointment of a Fish Commissioner, 279
 Prehistoric Quartzite Quarries, W. C. KNIGHT, 308
 Pressures, Gaseous Measurement of, C. F. BRUSH, 730
 PRESTON, E. D., Philosophical Society of Washington, 142, 215, 251, 321, 394, 502, 647, 719, 839
 Psychological Association, Sixth Annual Meeting of the American, LIVINGSTON FARRAND, 450
 Psychology, The New, E. W. SCRIPTURE, 750
 Pteridophytes and Gymnospermae, Relationships between, CONWAY MACMILLAN, 161
 Pure Science, The Debt of the World to, J. J. STEVENSON, 325; O. C. FARRINGTON, 605
 Reeve, S. A., Entropy-Temperature Analysis of Steam-Engine Efficiencies, R. H. THURSTON, 427
 RENOUF, E., Chemie, C. Arnold, 467
 Ryngota, The Mouth Parts of, JOHN B. SMITH, 374
 RICE, WILLIAM NORTH, Volcanoes of North America, I. C. Russell, 34
 RIES, H., N. Y. Academy of Sciences, Geology and Mineralogy, 683, 812
 Rogers, Wm. A., W. LE C. S., 447
 Romanes, G. J., Darwin and after Darwin, T. D. A. COCKEELL, 606
 Röntgen Rays on Plants, GEO. F. ATKINSON, 7
 ROOD, OGDEN N., On a Flicker Photometer, 757; On Color Blindness, 785
 ROTCH, A. LAWRENCE, Les Ballons-Sondes, W. de Fonvielle, 33; Aeronautical Conference, 846
 Roth, W. E., Northwest Central Greenland Aborigines, D. G. BRINTON, 498
 Royal Society, Conversazioni of the, 738
 Rubber, Singular Stress-Strain Relations of, R. H. THURSTON, 522
 Russell, I. C., Volcanoes of North America, WILLIAM NORTH RICE, 34
 S., W. LE C., William A. Rogers, 447
 Sachs, Julius, K. GOEBEL, 662, 695
 St. Louis Acad. Sci., W. TRELEASE, 143, 287, 429, 648
 SCHAPER, A., Lehrbuch der Entwicklungsgeschichte des Menschen, J. Kollmann, 779
 Schenck on the Predetermination of Sex, 736
 Schneider, A., General Lichenology, C. E. BESSEY, 68
 SCHREINK, H. VON, Englemann Botanical Club, 216, 359, 502
 Scientific Notes and News, 23, 58, 90, 128, 167, 205, 237, 276, 313, 348, 382, 418, 457, 492, 526, 564, 595, 631, 670, 708, 744, 768, 797, 827, 854; Alliance of New York, A Proposed Building for, 408
 SCRIPTURE, E. W., The New Psychology, 750; Electrical Anesthesia, 776
 Scripture, E. W., The New Psychology, G. M. STRATTON, 213
 Scudder, S. H., North American Orthoptera, A. S. PACKARD, 33; the Orthopteran Group Melanoplus (Acridiidae), S. HENSHAW, 497
 Scyllarides, Crustacean Germs, THEO. GILL, 98
 Shufeldt, R. W., Natural History of the U. S., C. F. B., 357
 Sidis, Boris, The Psychology of Suggestion, WILLIAM ROMAINE NEWBOLD, 863
 SMITH, E. A., Alabama Industrial and Scientific Society, 70, 504; Geological and Biological Surveys of Alabama, 678
 Smith, H. L., U. S. Geological Survey, Monograph XVIII., J. F. KEMP, 137
 SMITH, JOHN B., George H. Horn, 73; The Mouth-parts of the Ryngota, 374
 Smithsonian Institution, The, 255; Memorial of the, H. CARRINGTON BOLTON, 181
 SNYDER, M. B., Astronomy, A. M. Clerke, A. Fowler, J. E. Gore, 778
 Societies and Academies, 36, 70, 104, 141, 176, 215, 287, 321, 357, 392, 428, 468, 501, 540, 575, 612, 646, 681, 718, 782, 810, 839, 867
 SPALDING, V. M., A Natural History Survey of Michigan, 577
 Species, A Precise Criterion of, CHAS. B. DAVENPORT, 685, 776; J. W. BLANKINSHIP, 690; J. A. ALLEN, 801; FRANZ BOAS, 860; Definition of, J. McKEEN CATTELL, 751
 Speyers, C. L., Text-book of Physical Chemistry, FERDINAND G. WIECHMANN, 281
 Spiritualism as a Survival, E. S. MORSE, 749
 'Spoils System,' Logarithms on, 109
 STANLEY, H. M., Psychology and Memory, 713
 Steam Engine, Multiple-cylinder, R. H. THURSTON, 304
 Stereoscopic Vision, JOSEPH JASTROW, 615
 STEVENS, W. LE CONTE, Muscular Disturbances in Monocular Vision, 353; Color Vision, 513, 677; Laboratory Experiments in General Physics, S. W. Stratton and R. A. Millikan, 836
 STEVENSON, J. J., The Debt of the World to Pure Science, 325
 Stomata, Functions of, CHARLES E. BESSEY, 13
 Strasburger, E., Das kleine botanische Practicum, F. E. CLEMENTS, 392; E. NOLL, H. Schenck, and A. F. Schimper, Botany, C. E. BESSEY, 680
 Stratigraphical Nomenclature, C. R. KEYES, 571
 STRATTON, G. M., The New Psychology, E. W. Scripture, 213
 Stratton, S. W., and R. A. Millikan, Laboratory Experiments in Physics, W. LE CONTE STEVENS, 836
 Stricker, Solomon, 633
 STRONG, E. A., Zeitschrift für den physikalischen und chemischen Unterricht, 324; Erkenntnißtheoretische Grundzüge der Naturwissenschaften, P. VOLKMANN, Étude critique du matérialisme et du spiritualisme, Raoul Pictet, 864
 Suess, E., La face de la terre, J. B. WOODWORTH, 803

Swingle, W. T., Sphacelariaceen, F. E. CLEMENTS, 391
 Sylvester Memorial, R. MELDOLA, 65, 526

Teaching of Chemistry, W. P. MASON, 734
 Telegraphy, Wireless, 791

Teleoceres, A Complete Skeleton of, H. F. OSBORN, 554

Telescopes, The Function of Large, G. E. HALE, 650
 Temperatures, Water Surface, of Lake Titicaca, R. DEC. WARD, 28

Thaxter, R., Laboulbeniaceæ, GEO. F. ATKINSON, 752

Thompson, C. J. S., Alchemy and Pharmacy, H. CARRINGTON BOLTON, 499

THORNDIKE, EDWARD, Animal Intelligence, 818

Thraston, Y. P., The Antiquities of Tennessee and the Adjacent States, D. G. BRINTON, 539

THURSTON, R. H., Multiple-Cylinder Steam Engine, 303 ; Stones for Building and Decoration, G. P. Merrill, 392 ; Entropy-Temperature Analysis, S. A. Reeve, 427 ; Whittaker's Mechanical Engineer's Pocket-book, P. R. Björling, 427 ; Singular Stress-Strain Relations of Rubber, 522 ; The Calorific Power of Fuels, H. Poole, 574 ; Destruction of the United States Battleship Maine, 642 ; Il Codice Atlantico di Leonardo da Vinci, 755 ; Engineering Notes, 764 ; The American Society of Mechanical Engineers, 824

TITCHENER, E. B., Color Vision, 603, 832
 Titchener, E. B., Psychology, H. C. WARREN, 780

Torrey Botanical Club, E. S. BURGESS, 107, 252, 322, 359, 395, 430, 811, 867

Totem, The Import of the, ALICE C. FLETCHER, 296

Travel and Transportation, OTIS T. MASON, 66

TRELEASE, W., Academy of Sciences of St. Louis, 143, 287, 429, 648 ; Botany, The Biological Problems of To-day, 147

Trelease, W., Botanical Observations in the Azores, T. D. A. COCKERELL, 538

TRIMEN, R., Mimicry in Insects, 433

Trouessart, E. L., Catalogus Mammalium tam viventium quam fossilium, C. HART MERRIAM, 30

True, A. C., Agricultural Experiment Stations, T. D. A. COCKERELL, 753

TURNER, H. W., Classification of Igneous Rocks, 622

UNDERWOOD, LUCIEN M., Die Farnkräuter der Erde, H. Christ, 572

University and Educational Notes, 27, 63, 94, 133, 172, 210, 242, 279, 316, 353, 385, 423, 461, 495, 532, 569, 602, 636, 676, 712, 747, 773, 801, 831, 859

Van Hise, C. R., W. S. Bayley and H. L. Smith, U. S. Geological Survey, Monograph XVIII, J. F. KEMP, 137

Vision, Binocular Factors in Monocular, C. H. JUDD, 269 ; Retinal Images and Binocular, C. H. JUDD, 425 ; Muscular Disturbances in Monocular, W. LE CONTE STEVENS, 353

Vital Equilibrium and the Nervous System, C. L. HERRICK, 813

Volkmann, P., Erkenntnistheoretische Grundzüge der Naturwissenschaften, E. A. STRONG, 864

W., E. B., Bradney Beverley Griffin, 523 ; Zoology, T. J. Parker and W. A. Haswell, 535

WADSWORTH, M. E., Zirkelite, 30

WARD, H. B., Brevity in Citations, 317

WARD, R. DE C., Water Surface Temperatures of Lake Titicaca, 28 ; Harvard's Meteorological Work on the W. Coast of S. A., 95 ; Climatic Contrasts along the Oroya Railway, 133 ; South American Coastal Cloud, 211 ; Notes on Meteorology, 415, 524, 628, 766, 793 ; Exploration of the Air by Means of Kites, S. P. Ferguson, H. H. Clayton, 609

WARDER, R. B., The Phase Rule, W. D. Bancroft, 138 ; The Energetics of Chemical Phenomena, G. Helm, 139

WARREN, H. C., Psychology, G. T. Ladd, 610 ; E. B. Titchener, 780

Washington, Academy of Sciences, 58, 253, 595

Wattenwyl, B. von, The Coloration of Insects, 140

Weather Harmonics, H. H. CLAYTON, 243

WEEKS, F. B., Bibliographia geologica, M. Mourlon et G. Simeons, 808

WHEELER, J. R., Ancient Rome, R. Lanciani, 244

WHEELER, W. M., Entomology, A. S. Packard, 834

WHITMAN, C. O., Functions and Features of a Biological Station, 37 ; Zoology at Univ. of Chicago, 67 ; Lamarck and 'a Perfecting Tendency,' 99

WHITNEY, M., Climatology and Meteorology, 113

WIECHMANN, F. G., Text-book of Physical Chemistry, C. L. Speyers, 281

Wild Neighbors, ERNEST INGERSOLL, 172 ; VERNON BAILEY, 173

WILDER, BURT G., Anatomy, the Biological Problems of To-day, 150 ; Harrison Allen, 262

WILEY, H. W., Agricultural Chemistry, 16, 44 ; International Congress of Applied Chemistry, 280

WILLIAMS, H. S., Isolation and Selection, 637 ; On the Genetic Energy of Organisms, 721

Willson, F. N., Theoretical and Practical Graphics, GEORGE BRUCE HALSTED, 355

WINSLOW, A., A Natural Bridge in Utah, 557

Wisconsin Academy of Sciences, Arts and Letters, A. S. FLINT, 142

WOODMAN, DURAND, American Chemical Society, 108, 288, 503, 719, 867

WOODWORTH, J. B., La face de la terre, E. Suess, 803

WOOLMAN, L., Fossil Fulgor perversum at Avalon, N. J., 751

WRIGHT, W. H., Recent and Coming Eclipses, N. Lockyer, 99

X., Time Wasted, 66

X-Rays, Properties of, 564

Zirkelite, M. E. WADSWORTH, 30

Zoological, Club, University of Chicago, 104, 321, 576 ; Notes, F. A. L., 413 ; Garden, The Philadelphia, 632 ; Society of London, 741

Zoology, at the University of Chicago, C. O. WHITMAN, 67 ; International Congress of, 167

